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EXAMINER				
HIGGINS, GERARD T				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

## Application No.

10/531,962

## Applicant(s)

CIOC ET AL.

## Examiner

GERARD T. HIGGINS

## Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 5, 7, 9, 10, 13-17 and 19-28 is/are pending in the application.
- 4a) Of the above claim(s) 21-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5, 7, 9, 10, 13-17, 19 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. The amendment filed 08/10/2009 has been entered. Currently claims 1, 2, 5, 7, 9, 10, 13-17, and 19-28 are pending, claims 3, 4, 6, 8, 11, 12, and 18 are cancelled, and claims 21-28 are withdrawn. It is noted that claims 21-28 are not listed as withdrawn, and therefore the Examiner notes that they should be listed as withdrawn in response to this Office action.

### ***Claim Objections***

2. Claims 1, 5, 9, and 10 are objected to because of the following informalities:
- a. In claim 1, the phrase "metallic ions reducible to metallic particles are locally transferred" is objected to for grammatical reasons. This objection will be withdrawn if the phrase is changed to ", the metallic ions, reducible to metallic particles, are locally transferred."
  - b. In claim 5, the phrase "the metallic ions are of silver" is objected to for grammatical reasons. This objection will be withdrawn if the phrase is changed to "the metallic ions are silver."
  - c. In claim 9, the phrase "turned toward" is objected to because of grammatical reasons. This objection will be withdrawn if the phrase is changed to "facing," which is how the claim will be interpreted.

d. In claim 10, the phrase "turned toward" is objected to because of grammatical reasons. This objection will be withdrawn if the phrase is changed to "facing," which is how the claim will be interpreted.

Appropriate correction is required.

3. Claims 2, 14, 17, and 19 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

a. Claim 2 is attempting to claim that the donor medium *is* a localized metallic ion doping of the glass storage disk; however, this fails to limit the claim from which it depends because in claim 1 establishes that the donor medium is between the reflective coating and the glass storage disk and not apart of the glass storage disk.

b. Claim 14 is attempting to claim method steps that comprise reading of the stored information established in claim 13; however, all of the claims are drawn to a method of storing data, and therefore claim 14 fails to further limit claim 13.

c. Claim 17 talks about a deletion method; however, all of the claims are drawn to a method of storing data, and therefore claim 17 fails to further limit claim 13.

d. Claim 19 fails to limit the claim from which it depends because claim 16 has already established that the ions are reduced to particles by the absorption

of radiation; however, claim 19 now seeks to say that the reduction has occurred by heating the entire storage medium. This fails to limit the claim from which it depends.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 2, 9, 13-17, 19, and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

With regard to claim 2, the fact that the "donor medium *is* a localized metallic ion doping of the glass storage disk" is not supported by the specification as originally filed. The donor medium is a separate layer from the glass storage disk, and therefore the donor medium cannot be the localized metallic ion doping in the glass storage disk.

With regard to claim 9, the limitation that "the metallic ion doping is generally at a face of the glass storage disk" is not supported by the specification as originally filed. There is no description in applicants' specification as originally filed of what constitutes "generally at a face of the glass storage disk" or that the metallic ion doping was "generally at a face of the glass storage disk."

With regard to claim 13, the fact that there is "a donor medium or metallic ion on the reflective coating" does not find support in the specification as originally filed. This limitation is too broad because this allows the donor medium to be between the reflective coating and the polymer disk, which is not supported by the specification as originally filed. This rejection will be withdrawn if the limitation is changed to "a donor medium of metallic ions between the reflective coating and the glass storage disk" as recited in claim 1.

With further regard to claim 13, the process whereby the focused irradiation locally dopes the glass storage disk followed by "reducing the metallic ions in the glass storage disk to metallic particles arranged according to the data being stored" is not supported by the specification as originally filed because these limitation are too broad compared to the disclosure in the specification. The disclosure allows either there to be uniform or local heating of the glass storage disk to reduce the locally doped metallic ions (see claim 19 and see page 3, lines 19-24) or using the same focused electromagnetic or particle irradiation mentioned previously in claim 13 to generate said particles (see claim 14 filed on 02/05/09 or page 4, lines 8-18). Applicants' claims are drafted so broad that anything may be used to reduce the metallic ions to particles and this is not supported by the specification as originally filed.

Additionally applicants' claim 13 is also not supported because the locally doped metallic ions do not necessarily match up with the data being stored. This is not supported from the specification as originally filed because the concept that the locally doped metallic ions will match up with the data being stored even when the ions are

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reduced to particles. This rejection and the rejection from the previous paragraph will be withdrawn if the last two lines of the claim are changed to "reducing the metallic ions in the glass storage disk to metallic particles using localized or uniform temperature elevation of the glass storage disk above a transformation temperature, wherein the reduced metallic particles represent the data being stored." Please see page 3, lines 19-22.

With regard to claim 16, the limitation that "the ions are reduced to metallic particles by resonance-enhanced absorption of radiation" does not find support in the specification as originally filed. Resonance-enhanced absorption occurs by the metallic particles that then grow into an aggregation of metallic particles (see page 6, line 18 to page 7, line 3).

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1, 2, 5, 7, 9, 10, 13-17, 19, and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With initial regard to claims 1, 2, 5, 7, 9, and 10, the claims are indefinite because it is unclear if the claims are drawn to an optical recording medium having a donor layer that **can** have its metallic ions doped into the storage glass material, or if the claims are drawn to an optical recording medium that already has had the metallic ions doped into the storage glass material. The Examiner will seek to treat the claims using both

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possibilities. The evidence that the claims possess intended use limitations is seen in claim 1 with the phrase "when irradiated with a focused laser beam," while the evidence that the limitations are product-by-process limitations is seen in the fact that claim 2 assumes that the glass storage disk has had localized metallic ion doping from the donor medium.

With further regard to claim 1, the term "locally transferred" is a relative term which renders the claim indefinite. The term "locally transferred" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear how local the transfer must be to satisfy this claim. For the purposes of examination, the Examiner will treat this limitation as being anywhere nearby the donor medium.

With regard to claim 2, the term "**localized** metallic ion doping" is a relative term which renders the claim indefinite. The term "**localized** metallic ion doping" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear how localized the doping must be to satisfy this claim. For the purposes of examination, the Examiner will treat this limitation as being anywhere nearby the donor medium. Additionally it is unclear if the "localized metallic ion doping" of claim 2 is the same as "metallic ions are locally transferred from the donor medium into the storage glass material" of claim 1 or if there is a new doping/transfer of ions occurring.



With further regard to claim 2, the claim is indefinite because it is impossible for the donor medium to be both "between the reflective coating and the glass storage disk," according to claim 1, and also be "a localized metallic ion doping of the glass storage disk" as seen in claim 2. For purposes of examination, the Examiner maintains his rejections regarding interpreting the claims as product-by-process and intended use limitations. This rejection will be withdrawn if claim 2 is cancelled.

With further regard to claim 2, the phrase "can convert metallic ions of the doping into metallic particles" is indefinite because it is unclear what metallic ions are being referred to in this claim. This rejection will be withdrawn if the phrase is changed to "can convert the localized metallic ion doping into metallic particles," which is how the claim will be interpreted. This rejection will also be withdrawn if the claim is cancelled.

With further regard to claim 9, the term "generally at a face" is a relative term which renders the claim indefinite. The term "is generally at a face" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear how close to the surface the doping must be to be considered to be "generally at a face."

With regard to claim 13, the term "locally doping" is a relative term which renders the claim indefinite. The term "locally doping" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear what would comprise a locally doped material.

With regard to claim 14, the phrase "by electromagnetic or particle irradiation" renders the claim indefinite because it is unclear if there is a new set of irradiation or if it is the "focused electromagnetic or particle irradiation" of claim 13.

Claim 14 recites the limitation "the arrangement of the metallic particles" in the eighth line of the claim. There is insufficient antecedent basis for this limitation in the claim. This rejection will be withdrawn if "the arrangement of" is deleted from the claim.

With regard to claim 14, given the fact that claim 13 is a "process for storage of data," the recitation of positive method steps comprising a method of reading stored data renders the claim indefinite.

With further regard to claim 15, the phrase "reading and writing of the information with a laser beam" renders the claim indefinite. The reason is that the process of claim 13 is drawn to a storage method and not a reading method.

Claim 16 recites the limitation "the ions" in the sixth line of the claim. There is insufficient antecedent basis for this limitation in the claim. This rejection will be withdrawn if the phrase is changed to "the metallic ions."

With regard to claim 17, the claim now recites positive method steps that comprise a deletion method. All of the claims, including claim 13, are drawn to a process of storing data, and therefore claim 17 is indefinite because it is not a process of storing data.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1, 2, 5, 7, 9, and 10 are rejected under 35 U.S.C. 103(a) as obvious over Wu (5,078,771) in view of Nomura et al.'s "Super-Resolution Read-Only Memory Disk with Metal Nanoparticles or Small Aperture," Jap. J. Appl. Phys. Pt. 1, vol. 41(3B) pp. 1876-1879 (March 2002).

This rejection is treating the claims assuming that the product in question has ***already*** had the metallic ions doped into the storage glass material; hence the limitations in claim 1 that state "that when irradiated with a focused laser beam metallic ions reducible to metallic particles are locally transferred from the donor medium into the glass storage disk" are necessary steps in forming the optical recording medium, and are not intended use limitations.

With regard to claims 1, 7, 9, and 10, Wu describes a storage medium comprising a glass dielectric layer, which has an integral ion-exchanged surface layer (IIES layer) that is in the glass substrate and not laminated on top thereof (col. 27, lines 50-63). The IIES layer is formed with the glass substrate by heating the silver ions solution with the glass substrate and subsequent cooling (col. 4, line 56 to col. 5, line

15). Wu states at col. 33, lines 33-35 that a reflective coating may be sputtered onto the IIES layer.

The irradiation of the storage medium and the donor layer "that when irradiated with a focused laser beam" to have "locally transferred" metallic ions to create the IIES recording layer in applicants' claim 1 is a product-by-process limitation. It has been held that "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." Please see MPEP 2113 and *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). The Examiner takes the position that the heating of the glass layer and the silver ion layer to create the IIES layer in Wu is equivalent to applicants' locally transferred ion-exchanged layer formed by focused laser irradiation.

Alternatively, it would have been obvious to one having ordinary skill in the art of the manufacture of optical recording media to use a laser or any form of irradiation to selectively control the heating process that corresponds to the generation of the IIES (recording) layer. This would generate a boundary layer that would have the specific doping properties desired for applicants' intended use. The motivation for using other sources of radiation is it would simplify and reduce the cost of generating the optical recording media; however, Wu fails to specifically disclose or render obvious the polymer layer of claim 1, the optically functional structure in a polymer layer on a side

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facing the storage glass material of claims 7 and 10, and the doping arranged in proximity of a surface of the storage glass material facing the polymer layer of claim 9.

Nomura et al. disclose the structure of an optical recording medium in their Figure 5.

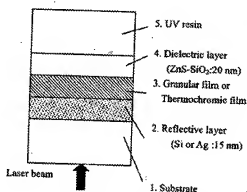


Fig. 5. Cross-sectional view of the sample disk.

Nomura et al. disclose that their granular film comprises small silver particles, wherein reflectivities are changed by increasing the silver particle size. The granular film layer 3 reads on applicants' glass storage glass disk (ion-doped layer), the substrate 1 is reads on applicants' polymer disk (Nomura et al. discloses the substrate may be polycarbonate, same as applicants), there is a reflective layer 2 arranged in between the granular film layer and the substrate, and there are tracks, which read on the optically functional structures of claims 7 and 10, on the polycarbonate substrate facing the granular film layer (pp. 1877, col. 2).

Since Nomura et al. and Wu are both drawn to optical recording media featuring layers with dispersed metal particles therein; it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the substrate with an optically functional structure facing in a specific direction of Nomura et al. with the

glass dielectric layer comprising an IIES layer and a reflective coating thereon of Wu. The results of this combination would have been predictable to one having ordinary skill in the art of CD/DVD manufacture; furthermore, each element would have performed the same in combination as they had separately. Additionally, Nomura et al. disclose using his recording medium to increase data capacity and recording density, which is extremely beneficial in the art of CD/DVD manufacture; further, the motivation to provide a means for tracking would be to make sure that the disc could be played in conventional optical recording/reproducing devices. Given the fact that the reflective coating of Wu is placed on top of the IIES layer, it is clear to the Examiner that this combination will result in the IIES layer facing towards the polymer disk, which reads on claim 9, and the optically functional structure of the polymer layer facing the glass storage disk.

With regard to claims 2, the Examiner notes that the limitations of claim 2 are intended use limitations of the article from claim 1. Intended use limitations are not dispositive of patentability; however, it is also noted that Wu discloses forming reduced elemental silver in the form of specks or particles by application of high energy beams (col. 30, lines 3-21). This reads on the limitations of claims 2, because the usage of a high energy **beam** intrinsically is a localized formation of particles. Wu provide numerous methods of increasing the yield of these specks or particles at col. 30, line 22 to col. 33, line 13. These are also made with substrates of glass. He discloses that these types of layers are useful in forming DVD's, and hence they can be formed with a

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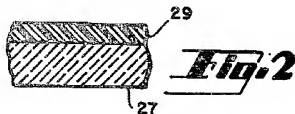
reflective layer so that they can be read or recorded in reflective mode (col. 33, lines 18-35).

With regard to claim 5, the IIES layer may be comprised of silver ions (col. 4, lines 22-33).

12. Claims 1, 2, 5, 7, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drexler et al. (4,269,917) in view of Nomura et al. "Super-Resolution Read-Only Memory Disk with Metal Nanoparticles or Small Aperture," Jap. J. Appl. Phys. Pt. 1, vol. 41(3B) pp. 1876-1879 (March 2002) as evidenced by Wu (5,078,771).

This rejection is treating the claims assuming that the product in question has **not** had the metallic ions doped into the storage glass material; hence the limitations in claim 1 that state "that when irradiated with a focused laser beam metallic ions reducible to metallic particles are locally transferred from the donor medium into the glass storage disk" represent intended use limitations.

With regard to claims 1, 7, and 10, Drexler et al. teach the data storage medium, which reads on applicants' storage medium, of Figure 2.



The data storage medium is comprised of a substrate 27, which may be made of glass and reads on applicants' glass storage disk, and a silver-halide emulsion layer 29,

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which reads on applicants' donor medium for metallic ions (col. 5, lines 57-62 and col. 6, lines 26-30); however, Drexler et al. fail to disclose that the disc structure has a reflective layer and a polymer disk, wherein the reflective layer is situated in between the glass storage disk and the polymer disk; further, that the polymer disk has an optically functional structure on a side of the polymer disk facing the glass storage disk.

Nomura et al. disclose the structure of an optical recording medium in their

Figure 5.

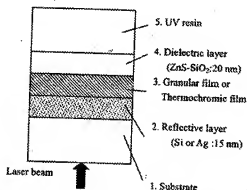


Fig. 5. Cross-sectional view of the sample disk.

The substrate and silver-halide emulsion layer of Drexler et al. read on the granular film layer location 3 of Nomura et al. because they both represent the recording layer of the media, the substrate 1 reads on applicants' polymer disk (Nomura et al. discloses the substrate may be polycarbonate, same as applicants), there is a reflective layer 2 arranged in between the granular film layer and the substrate, and there are tracks, which read on the optically functional structures of claims 7 and 10, on the polycarbonate substrate, which the Examiner deems is intrinsically facing the granular film layer (pp. 1877, col. 2). Nomura et al. disclose that their granular film comprises



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small silver particles, wherein the reflectivity is changed by increasing the silver particle size.

Since Nomura et al. and Drexler et al. are both drawn to optical recording media featuring recording layers of silver; it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the substrate with an optically functional structure facing in a specific direction and the reflective layer of Nomura et al. with the substrate and silver-halide emulsion layer of Drexler et al. The results of this combination would have been predictable to one having ordinary skill in the art of CD/DVD manufacture; furthermore, each element would have performed the same in combination as they had separately. The motivation to provide a means for tracking would be to make sure that the disc could be playing in conventional optical recording/reproducing devices; further, the motivation to provide a polymer layer would be to protect the silver halide emulsion layer; furthermore, the motivation to provide a reflective layer is to decrease the required laser intensity to color the recording layer. It would have also been obvious to have the silver-halide emulsion layer arranged to be facing towards the reflective layer because that would guarantee that the maximum amount of radiation was focused on the silver-halide emulsion layer, such that a minimum recording radiation would be required; further, the silver-halide emulsion layer would then be protected on the inside of the disk structure.

The Examiner deems the limitations in claim 1 that state "that when irradiated with a focused laser beam metallic ions reducible to metallic particles are locally transferred from the donor medium into the glass storage disk" represent intended use

limitations, which are not dispositive of patentability; however, as evidenced by Wu one of ordinary skill in the art would know how to operate the device of Drexler et al. in view of Nomura et al. to have silver ions diffuse into the glass substrate and/or form silver particles. For example see col. 4, line 51 to col. 5, line 12 and col. 30, lines 3-21, wherein the silver-halide emulsion reads on the  $\text{Ag}^+$  ion-containing material of Wu.

With regard to claims 2 and 9, these are also intended use limitations of the medium, which are not dispositive of patentability. Wu discloses that the IIES layer is a surface layer, which reads on applicants' metallic ion doping in generally at a face of the glass storage disk. Given the fact that the Examiner has rendered obvious the arrangement of substrate/silver-halide emulsion layer/reflective layer/polymer disk, it is clear that the IIES layer would be facing towards the polymer disk if the medium was irradiated upon as evidenced by Wu. With specific regard to claim 2, Wu evidences that this IIES layer may then be further treated with a high energy beam to record an image (col. 30, lines 3-21). This reduces the metallic ions to metallic particles, i.e. "silver specks" and "silver metal particles," which reads on applicants' metallic particles or aggregations of metallic particles.

With regard to claim 5, Drexler et al. teach silver-halide emulsions, which read on silver.

### ***Response to Arguments***

13. Applicant's arguments, see Remarks, filed 08/10/2009, with respect to the objections to claims 1, 2, 9, and 10 for informalities, the objection to claim 4 for failing to

limit the claim from which it depends, the rejection of claim 4 under 35 USC 112, first paragraph as lacking enablement, the rejection of claims 4, 7, and 12 under 35 USC 112, first paragraph as failing to comply with the written description requirement, and various rejections under 35 U.S.C. 112, second paragraph have been fully considered and are persuasive. The relevant objections/rejections have been withdrawn.

14. Applicant's arguments filed 08/10/2009 have been fully considered but are not persuasive.

The Examiner would first like to comment on the seeming confusion that has resulted concerning the product-by-process versus the intended use limitations in applicants' article claims 1, 2, 5, 7, 9, and 10. Applicants appear to be trying to keep protection for two different and very distinct embodiments within the same independent claim 1. The first embodiment has the donor medium separate from the glass storage disk (see page 2, lines 7-12) and the second embodiment has the donor medium being a thin uniformly doped layer *within* the glass storage disk (see page 4, lines 19-24). These two embodiments *cannot* be claimed together as they are distinct products, and by attempting to do so results in the claims being considered indefinite. The Examiner notes that applicants' amendments have not overcome this indefiniteness in the claims.

Applicants argue that stating in claim 1 that the article is "specially adapted for radiation-based doping and eventual reduction into metallic particles" defines claim 1 over the prior art.

The Examiner respectfully disagrees and notes this is arguing intended use limitations, which are **not** dispositive of patentability. The Examiner has rendered obvious the claimed article and deems that it can perform all intended use limitations claimed.

Applicants' argue that the lack of unity election by original presentation set forth by the Examiner in the Office action mailed 03/09/2009 was improper.

The Examiner respectfully disagrees and notes that all of the technical features of independent claim 1 are known to one having ordinary skill in the art, and therefore claim 1 does not possess any special technical features; hence, there cannot be any special technical feature that binds new claims 21-28 with claim 1. This therefore means the inventions lack unity. The Examiner maintains his position in this regard.

With regard to the reflective coating, the presently claimed invention, and not the "originally always claimed" invention as suggested by applicants, is what the Examiner is evaluating with regard to the lack of unity election by original presentation. It is interesting to note that applicants admit to placing the reflective layer into the claims earlier in prosecution, wherein they were not originally present in independent claim 1 (see page 10 of applicants' Remarks); furthermore, the Examiner notes that the reason applicants placed the reflective coating into independent claim 1 was to overcome the 35 U.S.C. 102(b) rejection set forth by the Examiner in the Office action mailed 02/20/2009. Present independent claim 1 lacks unity with independent claim 21, and therefore the Examiner maintains his election by original presentation argument.

The Examiner notes, contrary to applicants' position, that claims 13-17, 19, and 20 are not allowable outright because the claims lack written descriptive support based upon the originally filed specification and are indefinite. In fact the Examiner notes, analogous to what was stated above, that applicants appear to be trying to seek protection for too many inventions/embodiments within the same independent claim. For example, a method of reading a storage medium or a method of deleting a storage medium are not properly contained within a method of storing data.

### ***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Examiner has cited US 2,732,298 which teaches a process of making a photograph on glass. The process involves placing a photographing image comprising a compound of silver onto glass. The photographic image migrates into the glass using heat and is then developed.

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GERARD T. HIGGINS whose telephone number is (571)270-3467. The examiner can normally be reached on M-Th 10am-8pm est. (Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Ruthkosky can be reached on 571-272-1291. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Ruthkosky/  
Supervisory Patent Examiner, Art Unit 1794

GERARD T. HIGGINS  
Examiner  
Art Unit 1794

/G. T. H./  
Examiner, Art Unit 1794